TECHNIQUES FOR MEASUREMENT OF PERCEPTUAL AUDIO QUALITY

ABSTRACT

An audio processing tool measures the quality of reconstructed audio data. For example, an audio encoder measures the quality of a block of reconstructed frequency coefficient data in a quantization loop. The invention includes several techniques and tools, which can be used in combination or separately. First, before measuring quality, the tool normalizes the block to account for variation in block sizes. Second, for the quality measurement, the tool processes the reconstructed data by critical bands, which can differ from the quantization bands used to compress the data. Third, the tool accounts for the masking effect of the reconstructed data, not just the masking effect of the original data. Fourth, the tool band weights the quality measurement, which can be used to account for noise substitution or band truncation. Finally, the tool changes quality measurement techniques depending on the channel coding mode.